

sectional shape in the axial direction, as viewed in a section transverse to the axial direction, except for crest portions of said kneading blades; and

64 a screw segment comprising at least one screw blade, said screw segment, except for crest portions of the screw blades thereof, having the same sectional shape as said rotor segment, as viewed in a section transverse to the axial direction, except for the crest portions of said kneading blades.

REMARKS

Favorable reconsideration of the present application is respectfully requested.

Claims 1-3 and 5-11 remain active in the application.

The specification and claims have been amended to address the points raised in the objections of paragraphs 1-6 of the Office Action, which are believed to be moot. For example, the dependent claims now recite a screw set "in" a twin-screw extruder. Applicant respectfully submits that Claims 1-3 and 5-9 clearly set forth the sub-combination of a screw set positioned in a twin-screw extruder, whereas Claims 10 and 11 recite the combination of the twin-screw extruder having a screw set rotatably mounted in each of the chambers thereof.

Claims 1 and 10 have been amended to clarify that the section being recited is that viewed transverse to the axial direction, as is evident from Figures 1B and 2. Regarding paragraph 11 of the Office Action, it is noted that Claim 1 now recites a plurality of "tips different from each other." Basis for this can be found in Figures 3A-3C.

Concerning the prior art rejections, Applicant had previously pointed out that Inoue et al '593 fails to disclose the claimed feature that the screw segment has the same sectional shape as the rotor segment, except at the crest portions. Specifically, Applicant had pointed

out that the sectional shape of the screw portion 1a of Inoue et al is different from that of the rotor portion 1b.


In reply, the Examiner has not disagreed with Applicant's prior explanation. Instead, the Examiner has relied only upon two separate rotor portions 1b in Inoue et al as having the same sectional shape. See paragraph 12 of the Office Action; see also paragraph 8, which refers to both a first segment 1b and a second segment 1b. Thus, it is evidently the Examiner's position that because Inoue et al discloses two rotor segments 1b which have the same sectional shape, the limitations of the claims are met. However, the Examiner's attention is respectfully directed to the fact that the claims require the "same sectional shape" (except for the tips) for the screw segments and the rotor segments — not for two selected rotor segments.

The segments 1b of Inoue et al are "rotor" segments, whereas the segments 1a are screw segments (column 5, line 20). The Examiner has thus compared the shape of two rotor segments, and not a screw segment with a rotor segment as is recited in the claims. The shape identity for two rotor segments 1b of Inoue et al has no bearing on the claims of the present application, and so Applicant respectfully submits that the claims define over Inoue et al.

Applicant therefore believes the present application is in a condition for allowance and respectfully solicits an early notice of allowability.

Respectfully submitted,

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IN THE SPECIFICATION

Please change the paragraph beginning at page 14, line 9, to read:

--The different types of kneading rotors 14 - 16, shown in Figs. 3A to 3C, were prepared in which the diameter was set to 58 mm, the lower tip clearance provided by each of the taller tip portions 14b - 16b was set to 0.5 mm, and the greater tip clearance provided by each of the lower tip portions 14c - 16c was set to 3 mm. The kneading blades 14a - 16a of the kneading rotors 14 - 16 were set such that the forward type has a twist angle of [300] 30° with respect to the axial direction, the neutral type has a twist angle of 0° with respect to the axial direction and the backward type has a twist angle of 30° with respect to the axial direction. Then, the rotor segment 12 having a segment length of 50 mm was fabricated by arranging the three types of kneading rotors 14 - 16 in the order of the forward type, the neutral type, the forward type, the neutral type, and the backward type in the flowing direction, as shown in Fig. 5.--

IN THE CLAIMS

--1. (Twice Amended) A screw set in a twin-screw extruder for mixing and dispersing a material to be kneaded into a kneaded product having a desired state of kneading, [each] said screw set comprising:

a rotor segment comprising at least one kneading rotor, said kneading rotor having a plurality of kneading blades which provide a plurality of [tip clearances] tips different from each other at least in the circumferential direction, said kneading rotor having a constant sectional shape in the axial direction, as viewed in a section transverse to the axial direction, except for crest portions of said kneading blades; and

a screw segment comprising at least one screw blade, said screw segment, except for crest portions of the screw blades thereof, having the same sectional shape as said rotor segment, as viewed in a section transverse to the axial direction, except for the crest portions of said kneading blades.

2. (Twice Amended) The screw set [for] in a twin-screw extruder according to Claim 1, each said screw set further comprising:

a kneading disk segment comprising at least one kneading disk, said kneading disk segment, except for crest portions of disk blades thereof, having the same sectional shape as said rotor segment, except for the crest portions of said kneading blades.

3. (Twice Amended) The screw set [for] in a twin-screw extruder according to Claim 2, wherein all of said kneading disks have the same sectional shape as said rotor segment, except for the crest portions of said kneading blades.

5. (Amended) The screw set [for] in a twin-screw extruder according to Claim 1, wherein said rotor segment comprises at least one of three types including a first type in which said kneading blades are twisted clockwise with respect to the axial direction, a second type in which said kneading blades are extended parallel to the axial direction, and a third type in which said kneading blades are twisted counterclockwise with respect to the axial direction.

6. (Amended) The screw set [for] in a twin-screw extruder according to Claim 5, wherein said rotor segment comprises at least two of said three types.

7. (Amended) The screw set [for] in a twin-screw extruder according to Claim 6, wherein said rotor segment comprises all of said three types.

8. (Amended) The screw set [for] in a twin-screw extruder according to claim 1, wherein the number of said kneading blades is two.

9. (Amended) The screw set [for] in a twin-screw extruder according to Claim 1, wherein the number of said kneading blades is three.

10. (Amended) A twin-screw extruder for mixing and dispersing a material to be kneaded into a kneaded product having a desired state of kneading, said extruder comprising:
a barrel having two intercommunicating chambers; and
a screw set rotatably mounted in each of said chambers so as to mesh with one another, each of said screw sets comprising:

a rotor segment comprising at least one kneading rotor, said kneading rotor having a plurality of kneading blades which provide a plurality of tip clearances different from each other at least in the circumferential direction, said kneading rotor having a constant sectional shape in the axial direction, as viewed in a section transverse to the axial direction, except for crest portions of said kneading blades; and

a screw segment comprising at least one screw blade, said screw segment, except for crest portions of the screw blades thereof, having the same sectional shape as said rotor segment, as viewed in a section transverse to the axial direction, except for the crest portions of said kneading blades.--